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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,575	11/06/2001	Sanjay Dabral	05053.P001	8663
8791	7590	03/29/2004	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD, SEVENTH FLOOR LOS ANGELES, CA 90025			DEO, DUY VU NGUYEN	
			ART UNIT	PAPER NUMBER

1765

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/993,575

Applicant(s)

DABRAL ET AL.

Examiner

DuyVu n Deo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 2002/0077035 A1) and Agarwal et al. (US 6,206,759).

Wang describes a polishing pad comprising: a base layer 12 (claimed base support layer in claim 1 or the base layer in claim 12), and an ion exchange layer (claimed a base layer having ion exchange layer disposed in the base layer in claim 1) on the base 12 (paragraph [0021], [0042]-[0044]). Unlike claimed invention, Wang doesn't describe the pad having at least one of the base (or the resin layer as in claim 12) and the base support layer (or the base layer as in claim 12) patterned. Agarwal describes a polishing pad that is patterned to the base (col. 10, line 1-27). It would have been obvious for one skill in the art at the time of the invention to pattern the polishing pad, including patterning the base and the ion exchange layer because Wang describes that the conventional polishing pads comprise grooves to convey the slurry to the wafer while undergoing CMP (paragraph [0008]) and Agarwal teaches that patterning the pad to form grooves for transporting planarizing solution and provide sufficient flexibility to the pad (col. 10, line 4-6, 12, 13).

Referring to claims 2, 12, 13, the ion exchange materials layer can be polymer resins (paragraph [0034]) and in the form of beads [paragraph [0019]]. Also, the ion exchange particles

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are embedded or impregnated in a porous polymeric layer (paragraph [0044]). This would read on claimed ion exchange resin beads and a resin layer having ion exchange material embedded therein.

Referring to claims 10 and 11, the ion exchange layer binds cations including copper ions (paragraphs [0032], [0036]).

Referring to claims 3 and 14, even though Wang doesn't describe the ion exchange layer comprises ground ion exchange beads or ion exchange powder; however, he suggests that the ion exchange resin can be in a variety of different physical forms depending primarily on the form of the initial matrix resin (paragraph [0037], [0039]). Therefore, at the time of the invention, using other forms of the ion exchange resin such as claimed ground or powder would have been obvious with a reasonable expectation of success.

Referring to claims 4 and 5, using any method such as pressing the ion exchange beads into the ion exchange layer would be obvious because Wang describes that the ion exchange material is embedded or impregnated in the ion exchange layer (paragraph [0044]). Furthermore, these claims do not carry patentable weight since they do not describe structural parts of the apparatus as claimed but method for forming the apparatus.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5, 10-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification doesn't describe the limitations of "a base support layer, wherein at least one of the base layer and the base support layer is patterned" as in claim 1 and "wherein at least one of the base layer and the resin layer is patterned" as in claim 12.

### ***Response to Arguments***

5. Applicant's arguments filed 2/9/04 have been fully considered but they are not persuasive.

Applicant's argument that Wang doesn't describe the pad having at least one of the base layer (or resin layer as in claim 12) or the base support layer (or the base layer as in claim 12) patterned is acknowledged. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Referring to applicant's argument that Agarwal doesn't teaches the polishing pad that is patterned to the base because the backing member (or base layer) is composed of compressible polymeric material or of a cured resin is found unpersuasive because it doesn't matter what the base layer is made of in the claims. Furthermore, the base layer is relative in the claims. As in claim 1, the base layer is the layer that has ion exchange layer disposed therein while in claim 12, the base layer doesn't have ion exchange material. Agarwal shows that it doesn't matter how many layers a pad has. The grooves extended down to the bottom layer. It would have been

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obvious for one skilled in the art to modify Wang's polishing pad in light of Agarwal's groove because Agarwal teaches that patterning the pad to form grooves for transporting planarizing solution and provide sufficient flexibility to the pad (col. 10, line 4-6, 12, 13).

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 571-272-1462. The examiner can normally be reached on 6:00-3:30; with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DVD

3/25/04

